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Executive Director - Federal Regulatory

U S WEST
life's better here

EX PARTE

May 31, 2000

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 – 12th Street, SW, Room TW-A325
Washington, DC 20554

RE: CC Docket No. 96-98 and CC Docket 98-147

Dear Ms. Salas:

On May 19, 2000, Melissa Newman, Bob McKenna and Mary Retka, representing U S WEST, met with Staci Pies, Doug Cooper and Jon Reel of the Common Carrier Bureau and Shanti Gupta, Paul Marrangoni and Jerry Stanshine of the Office of Engineering and Technology. The purpose of the meeting was to discuss issues relating to remote terminals used in U S WEST's outside plant network. The attached document served as the basis of the discussion.

In accordance with Section 1.1206(b)(2) of the Commission's rules, an original and one copy of this letter and attachment are being filed with your office for inclusion in the record of the above-referenced proceeding.

Acknowledgment and date of receipt of this submission are requested. A duplicate of this letter is attached for this purpose.

Please contact me should you have any questions concerning this matter.

Sincerely,

Elridge Stafford

Attachment
cc: Doug Cooper
Staci Pies
Jon Reel
Shanti Gupta
Paul Marrangoni
Jerry Stanshine

U S WEST
ex parte
Presentation to the FCC on the Elements of the Outside Plant Network

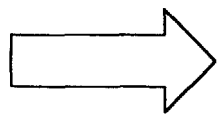
May 19, 2000

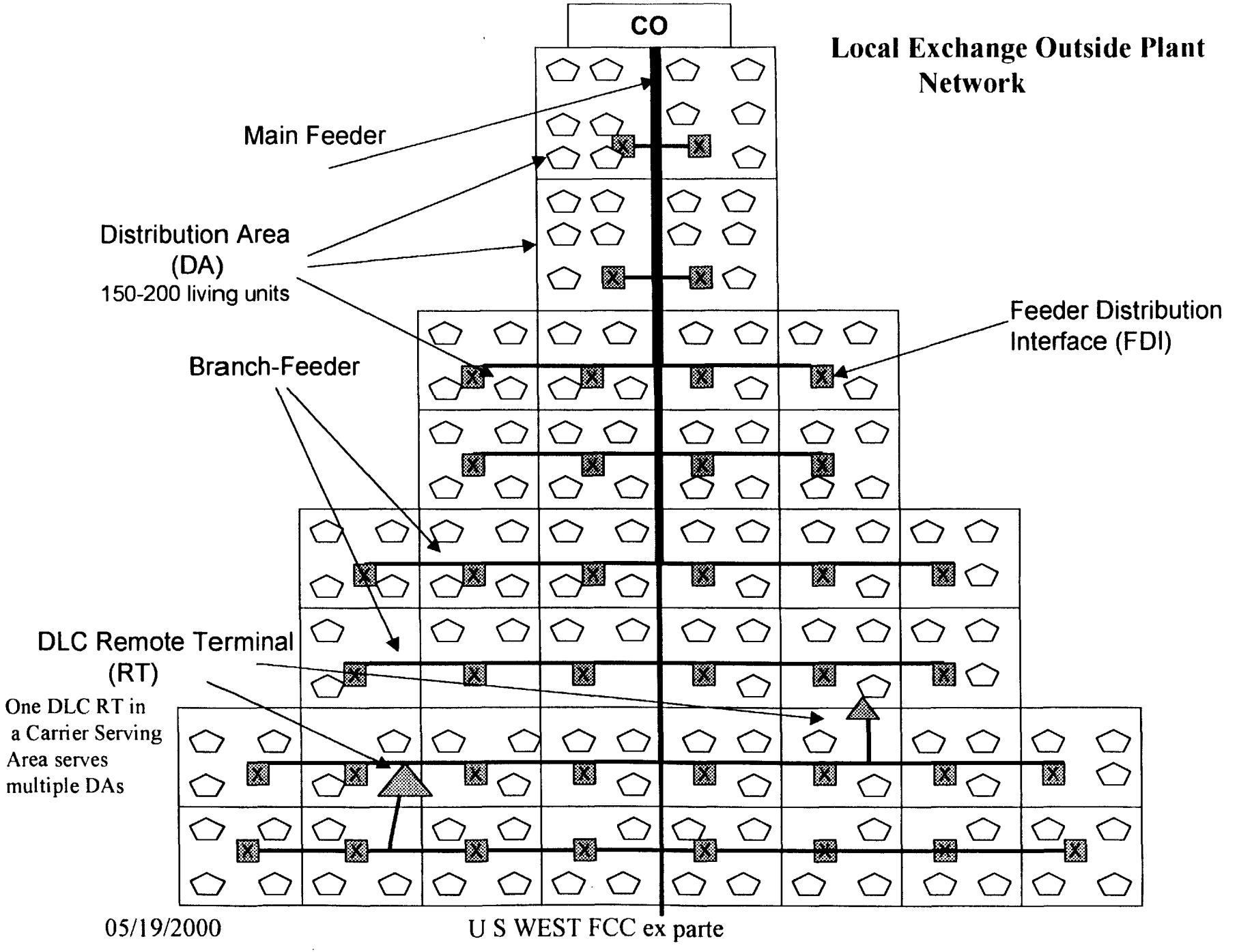
Topics

- The Outside Plant Network
- What is the DLC Remote Terminal and the Feeder Distribution Interface?
- How is U S WEST providing Sub Loop Unbundling?
- Why is U S WEST unbundling at the FDI instead of the DLC RT?
- Where should a remote DSLAM be placed?

How is U S WEST's Outside Plant structured out of the CO?

See the next page




CO
Local Exchange Outside Plant Network
Main Feeder
Distribution Area (DA)
150-200 living units
Feeder Distribution Interface (FDI)
Branch-Feeder
DLC Remote Terminal (RT)
One DLC RT in a Carrier Serving Area serves multiple DAs

Outside Plant Network Terminology

- **Feeder** - This is the large cable facility out of the central office directing the loop path toward the neighborhoods served by that central office. This path branches off at the Feeder Distribution Interface to complete the loop path to the end user served party.
- **Distribution** - This smaller facility connects the individual customer from the FDI through the cable to a service terminal and a drop to their premise to complete their loop.
- **Digital Loop Carrier** - (DLC) The multiple channel path system used to aggregate facilities between a remote point in the outside plant and the central office. The remote end is the DLC remote terminal and the central office end is the central office terminal.
- **DLC Remote Terminal** - (RT) The field side of the Digital Loop Carrier system. The central office end is called a central office terminal. The DLC remote terminal is in the feeder plant.
- **Feeder Distribution Interface** - (FDI) The terminal in the outside plant where the facility from the central office, the feeder, branches off to the facility which serves the neighborhoods, the distribution. The feeder and the distribution facilities are cross connected here.
- **Controlled Environmental Vault** - (CEV) This is an underground enclosure which is a low maintenance, water tight, permanent structure, where facilities are placed and are accessed for provisioning, maintenance and repair.
- **Controlled Environmental Above Ground Enclosure** - This is an above ground structure, similar to the CEV, where facilities are placed and are accessed for provisioning, maintenance and repair.

What Is Meant by the Term "Remote Terminal"

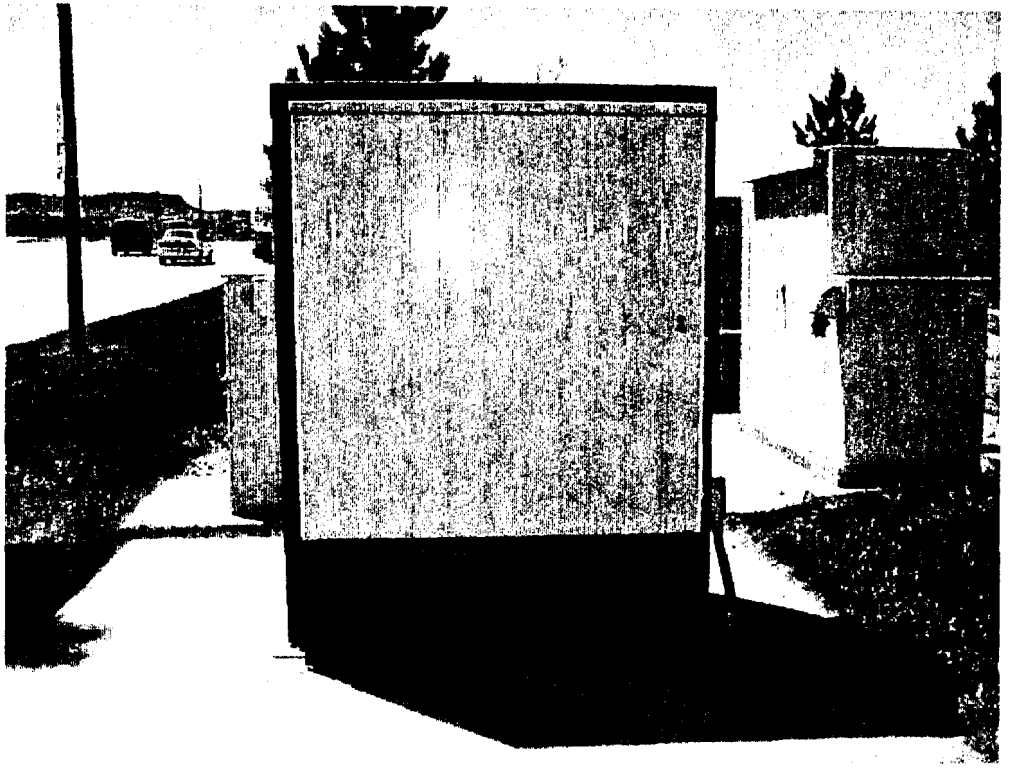
- There are many different types of cabinets in the outside plant network, such as DLC Remote Terminal cabinets, Feeder Distribution Interface cabinets, Service Terminal cabinets, and more. Many of these are referred to as "remote terminals".
- The standard industry use of the term refers to the cabinet on the field side of a DLC system, the DLC Remote Terminal.

What is the DLC Remote Terminal?

- The DLC remote terminal is the field side of the Digital Loop Carrier system. DLC is a standard growth solution in U S WEST. The DLC Remote Terminal is used in the feeder plant of the outside plant network.
- The DLC RT allows for aggregation of facilities back to the central office.
- A DLC RT can be in a cabinet, controlled environmental vault, or controlled environmental above ground enclosure.

Remote Terminal

Lucent 80A Cabinet

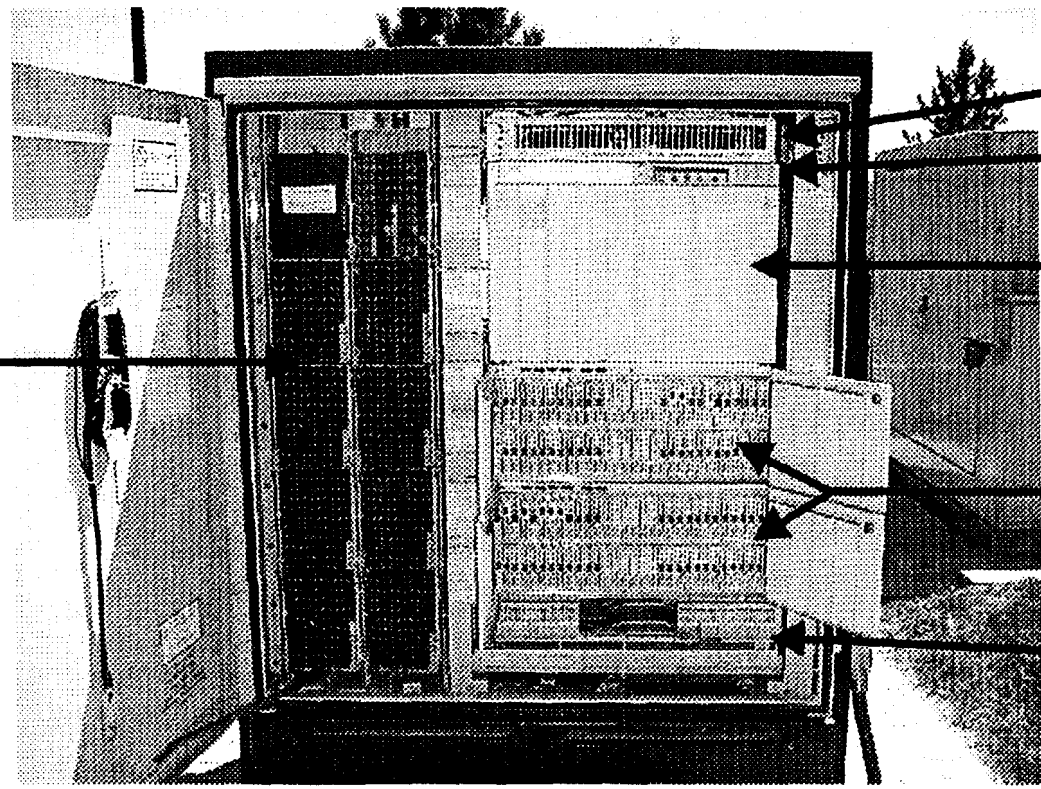


Cabinet - Side 1

Remote Terminal

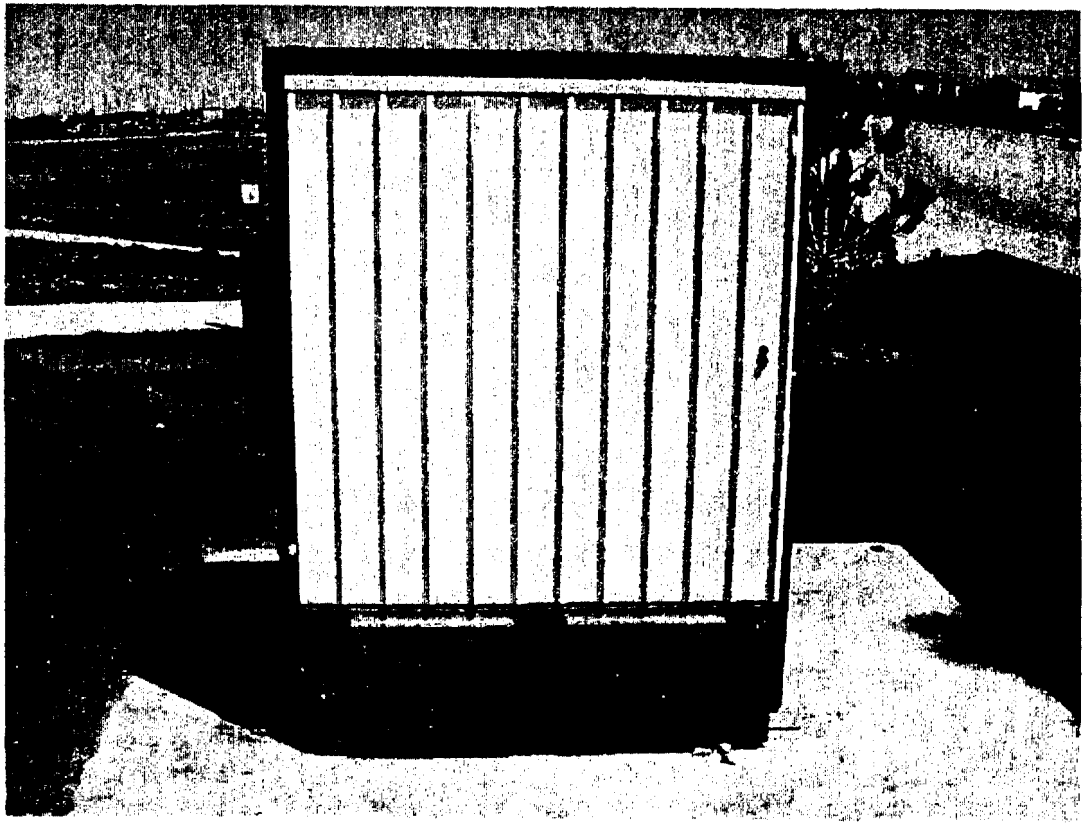
Lucent SLC-2000 NGDLC

Internal Side 1



Remote Terminal

Lucent 80A Cabinet



Cabinet - Side 2

Remote Terminal

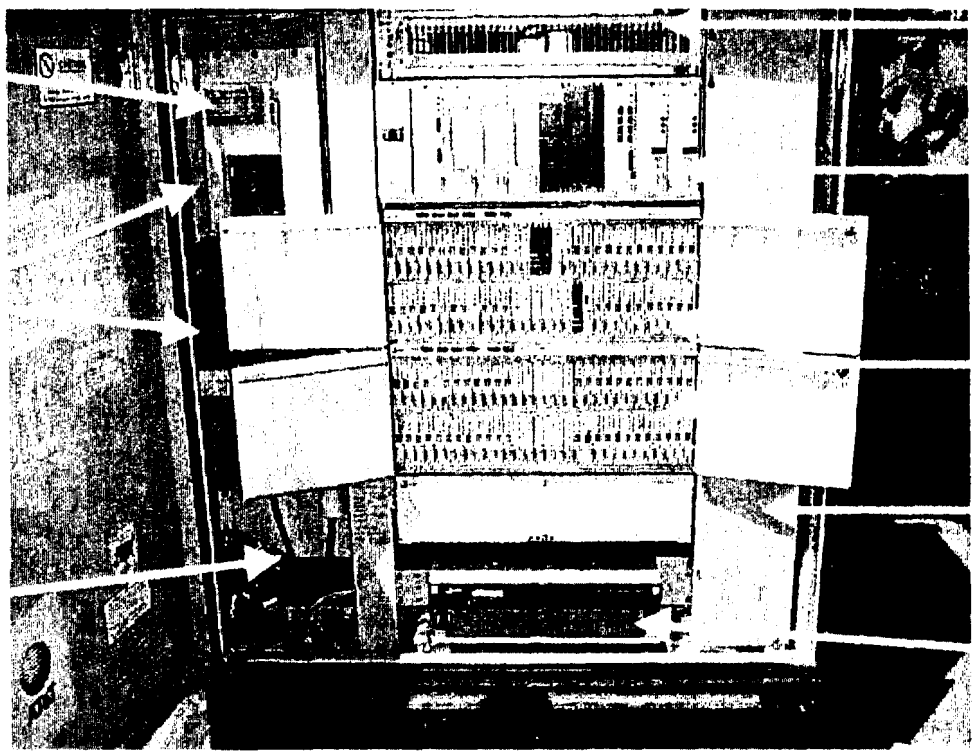
Lucent SLC-2000 NGDLC

Internal Side 2

Alarms

AC Power

Fiber



Heat Dispersion Fan

Power (-48v DC)

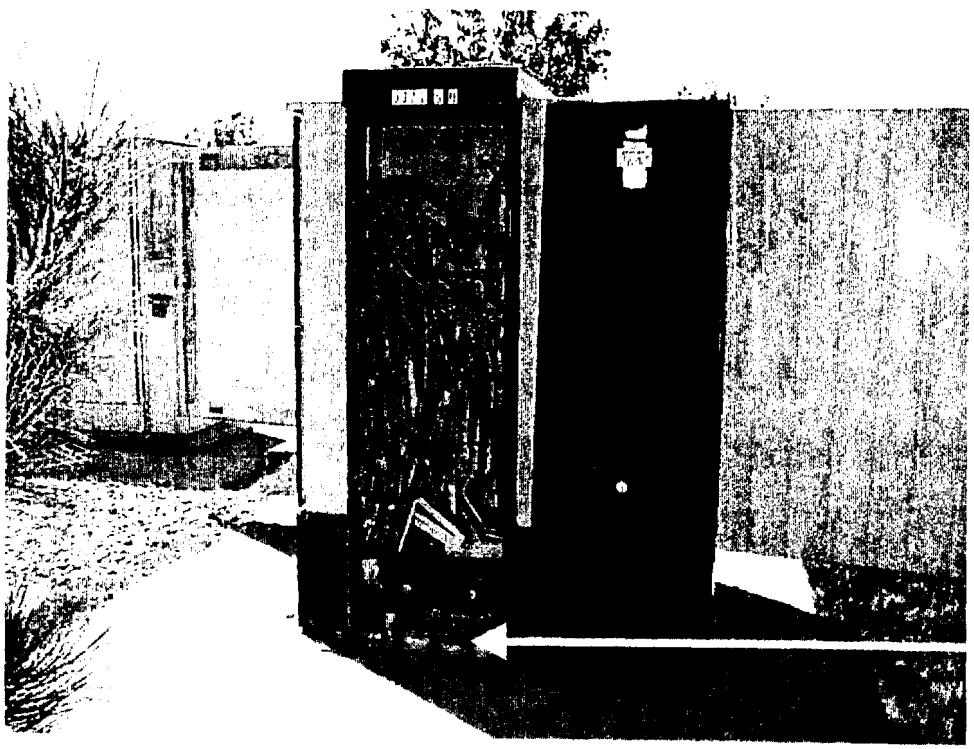
Channel Bank with Line Cards

Splice Chamber (Copper)

Fiber Splice Tray

Remote Terminal

Splice Chamber

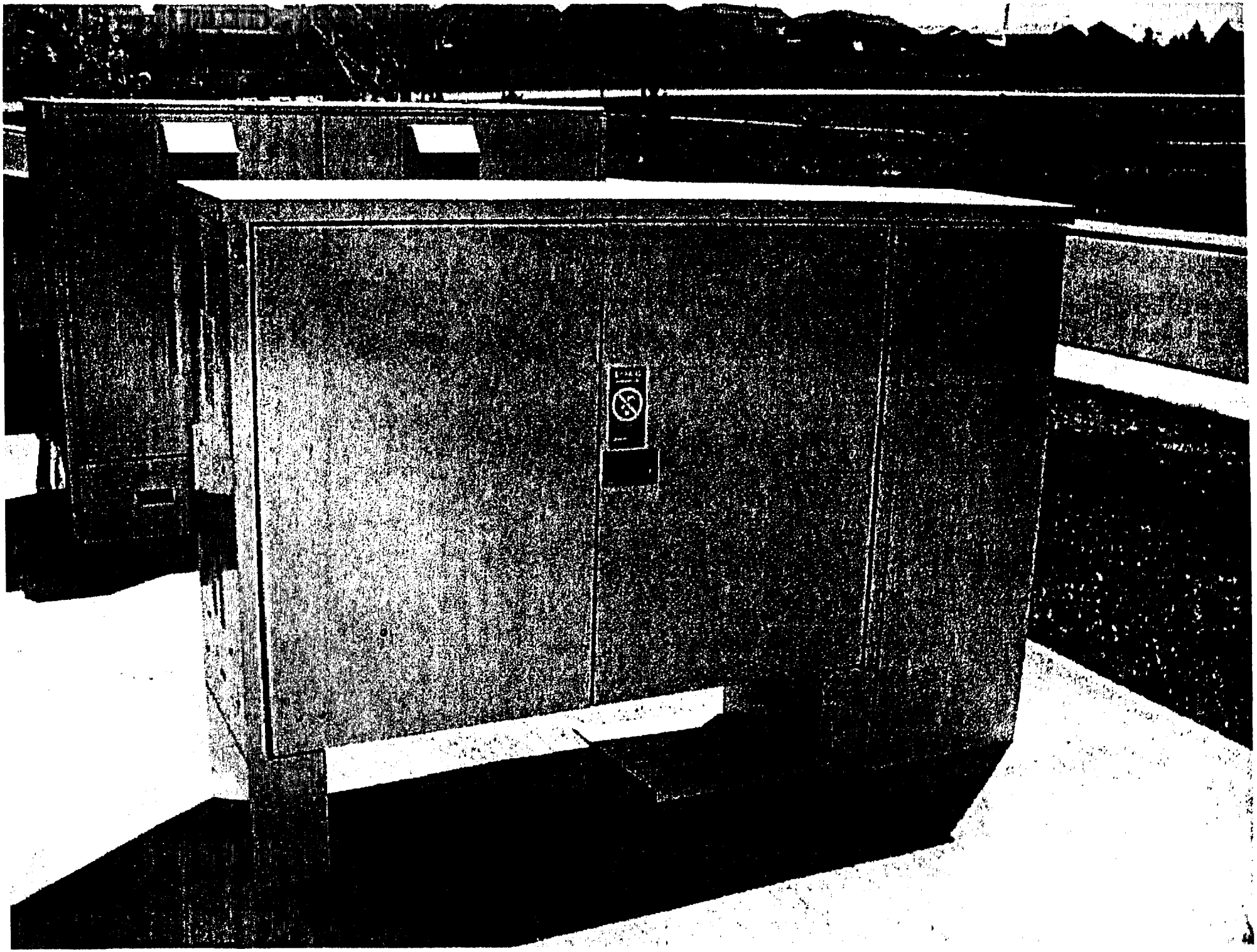


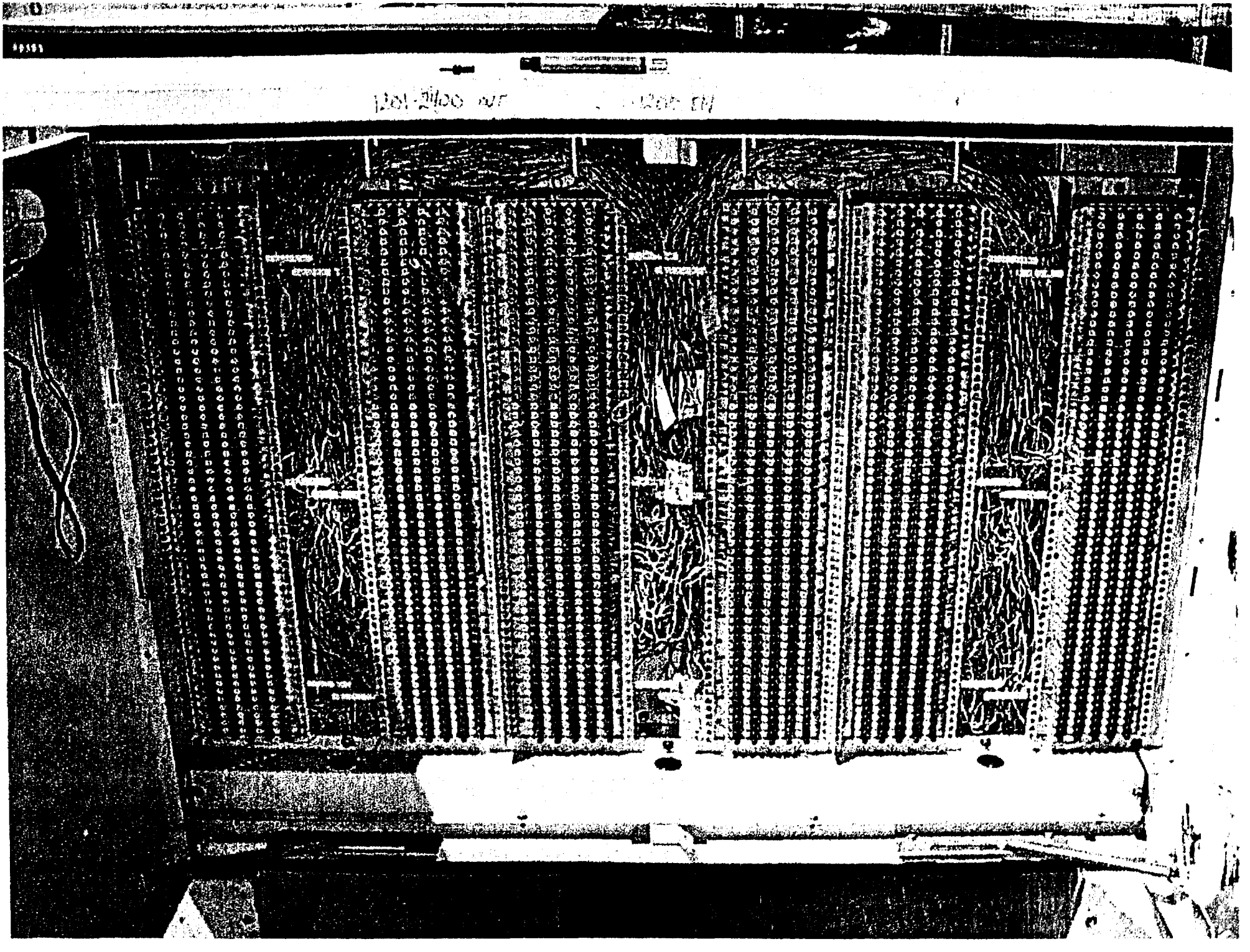
Lines derived from DLC are spliced into cable that terminates at the Feeder Distribution Interface.

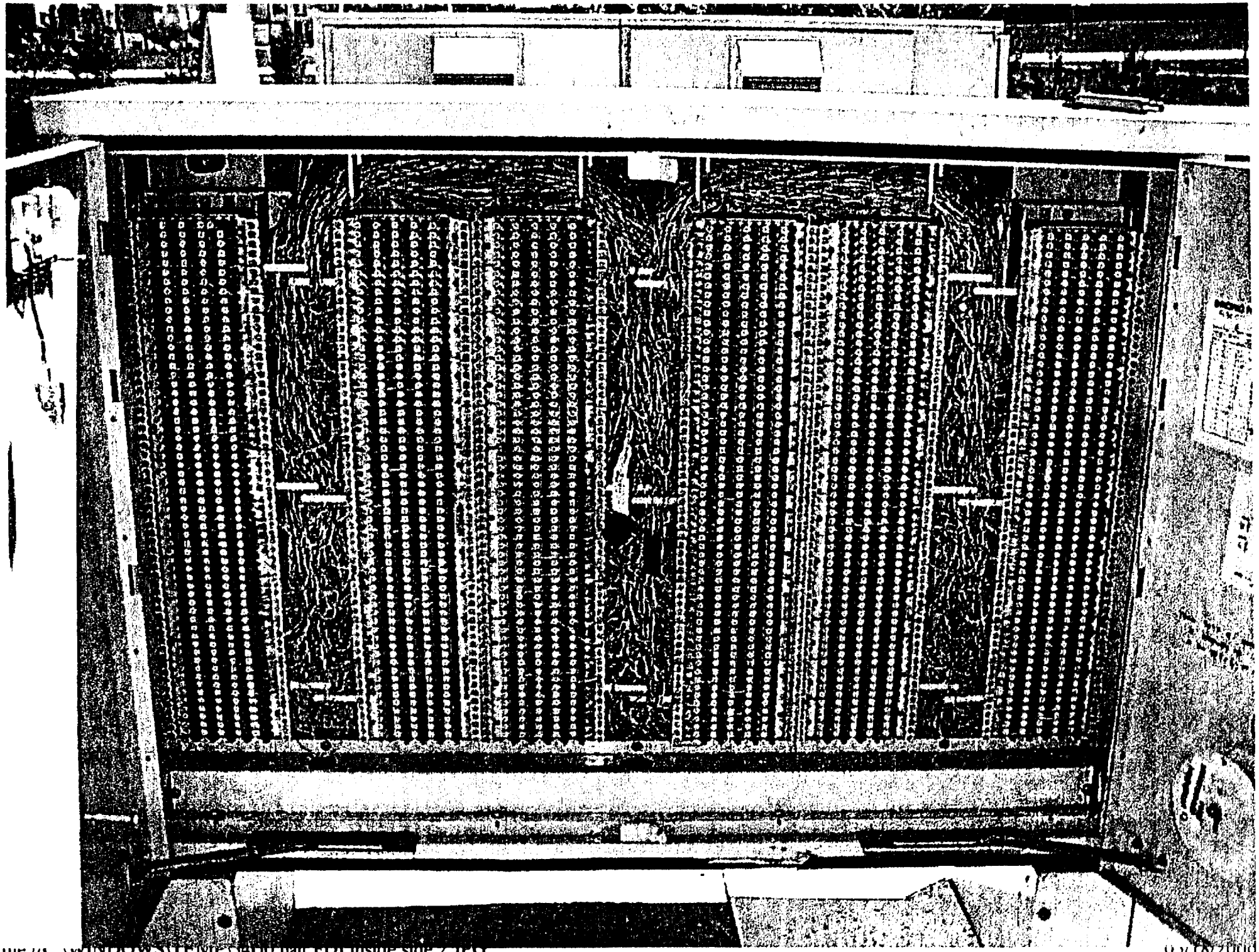
Cable Ducts

What is the Feeder Distribution Interface?

- The point in the outside plant network where the facility from the Central Office, the feeder plant, is joined with the facility to the end user, the distribution plant, is called the Feeder Distribution Interface (FDI).
- This is done via a cross connection.The cross connections occur on blocks housed in the FDI.



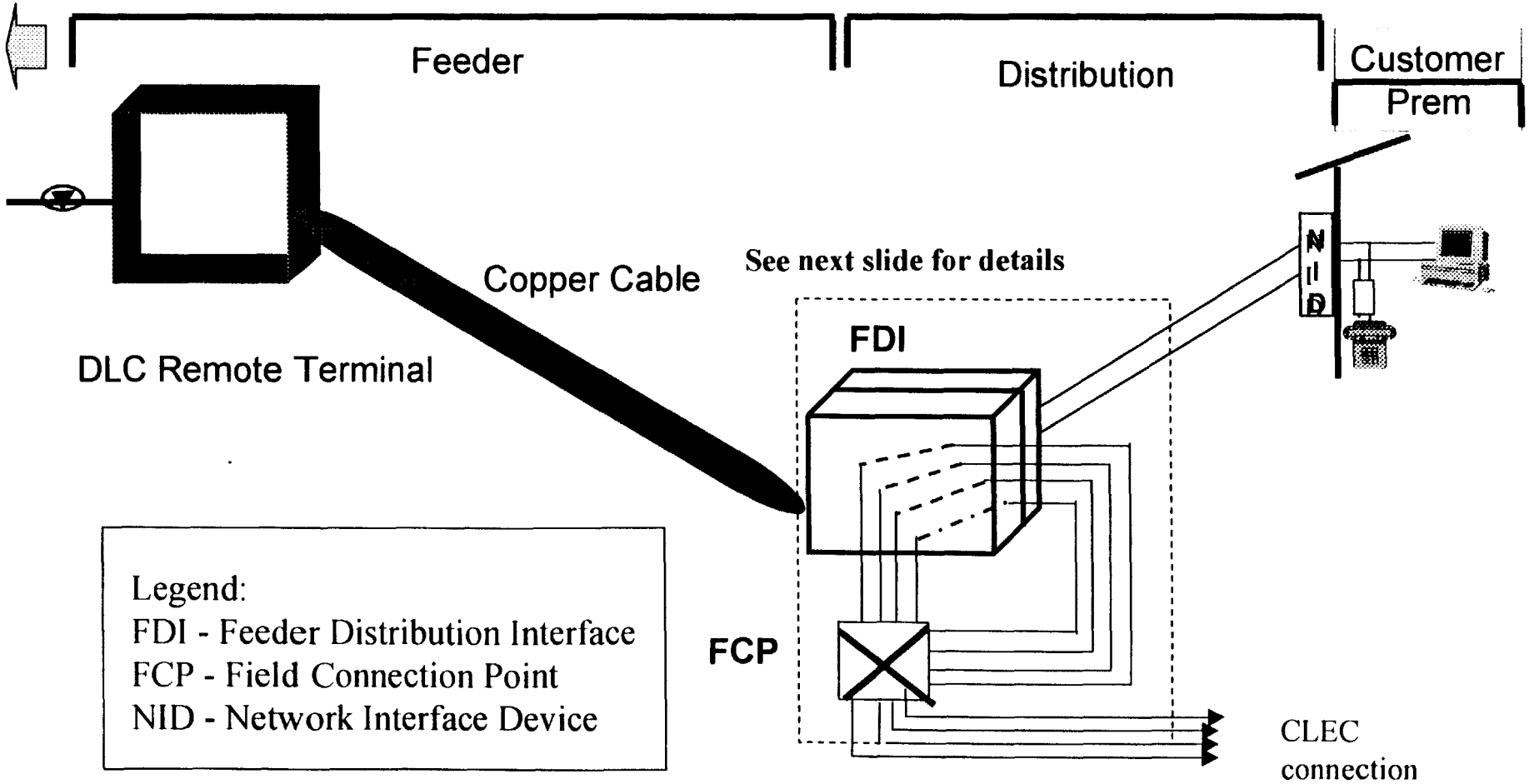




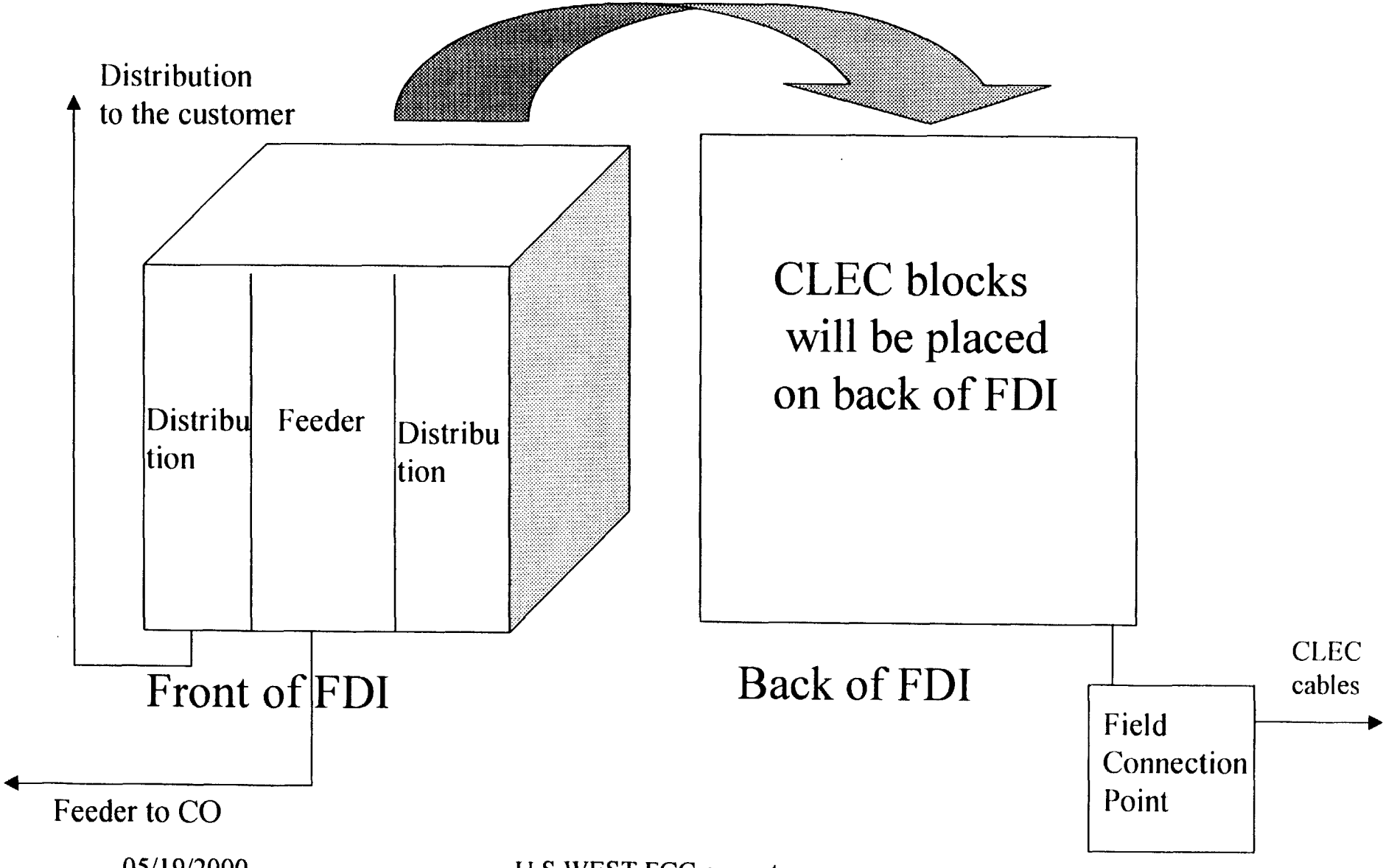
Unbundling in the Outside Plant

- As required in the FCC's UNE Remand order, U S WEST will provide unbundling at the sub loop level in the outside plant.
- U S WEST's new standard sub loop UNEs will be: Unbundled Feeder and Unbundled Distribution.
- Custom sub loop requests will be handled via bona fide requests (BFRs).

Sub Loop Unbundling



FDI Adjusted for Sub Loop



Sub Loop Unbundling at the FDI

- There are currently no projections of demand for sub loop unbundling. The requests for sub loop UNEs will initially require a field visit to determine the method to be used at the FDI to accommodate the UNEs.
- Where the existing FDI locations in U S WEST have room to accommodate the additional CLEC cable connections and blocks the cabinets will be retrofitted to do so.
- Some cabinets may require replacement.

Why is U S WEST unbundling at the FDI instead of at the DLC RT?

- U S WEST is providing sub loop UNE access at accessible locations where the cross connection points exist in the outside plant network, the FDI.
- ***There are no cross connections at the DLC RT for access to sub loop elements.***
- U S WEST currently is not deploying remote DSL at either the DLC RT or the FDI, so no DSLAMs are at either location. (Thus, there is no location for any party to put a DSL card into - and cards are vendor specific.)
- CLECs may want to collocate DSL equipment at either the DLC RT or FDI.
- CLEC collocation requests will be handled via the collocation process.

Deployment of DSLAMs in the Outside Plant

- DSL service requires access to the copper loop.
- In DLC provisioned loop plant, the fiber to copper transition is done at the DLC RT via an optical to electrical conversion.
- Thus the DSLAM equipment to access the loop needs to be placed past the point at the DLC RT where the fiber terminates.

DSLAM Deployment in the Outside Plant

- There are two logical choices when placing DSLAM equipment in the Outside Plant:
  - Placement at the DLC RT
  - Placement at the FDI
- Either choice has areas for consideration:
  - Space for the DSLAM equipment
  - Powering requirements of the DSLAM
  - Environmental/cooling requirements
  - Access to cross connections

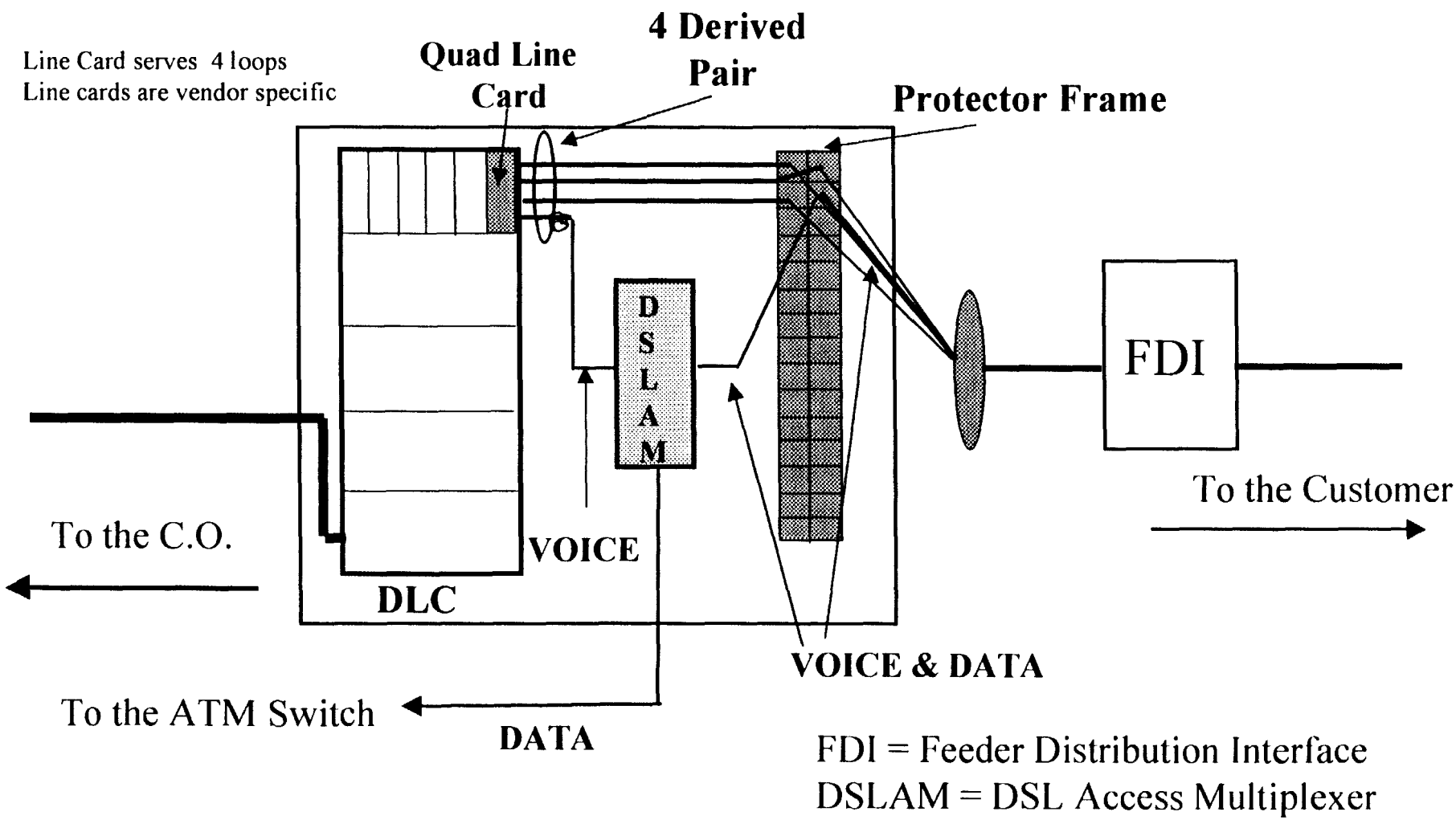
Considerations for Placement of DSLAMs at the DLC RT

- The DLC RT generally serves multiple FDIs and thus has the potential to reach far more facilities than the FDI.
- The DLC RT is the point where the fiber is terminated and the loop then continues on copper.
- The DLC RT may be in a CEV or enclosure which provides protection from the natural elements. There will be power at the DLC RT. It may require augmentation to accommodate the DSLAM and cooling requirements.
- Space for the DSLAM and additional power or cooling equipment may be available, and in some cases it may not be available. Excess space at the DLC RT will generally be minimal.
- ***There are no cross connections at the DLC RT.***

Considerations for Placement of the DSLAM at the FDI

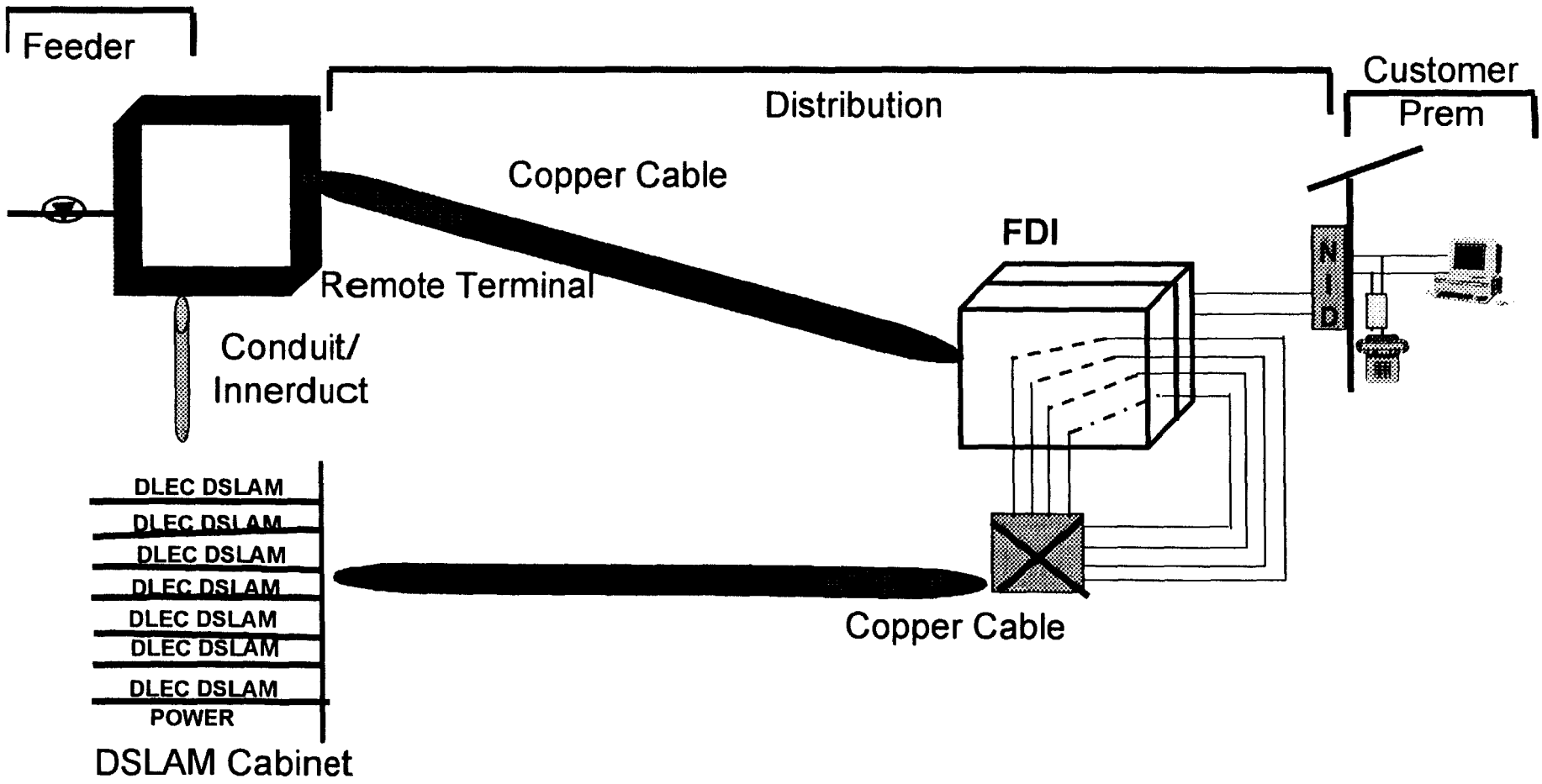
- ***The FDI is the point where the cross connections are accessible in the loop plant.*** This is also the point where standard Outside Plant UNEs will be provided.
- The facility at the FDI is copper which is what is needed for provision of DSL.
- The purpose of the FDI is for cross connections and the FDI can be adjusted to provide for CLEC cross connections.
- The FDI will generally not have power to the site. This will need to be added for the DSLAM.
- The FDI will require augmentation to allow for cooling for the DSLAM equipment.
- Space for the DSLAM, power, and environmental equipment may require additional pad and right of way considerations to allow for the placement of the additional cabinet for the equipment.

A DLC REMOTE TERMINAL WITH A SMALL INTEGRATED DSLAM

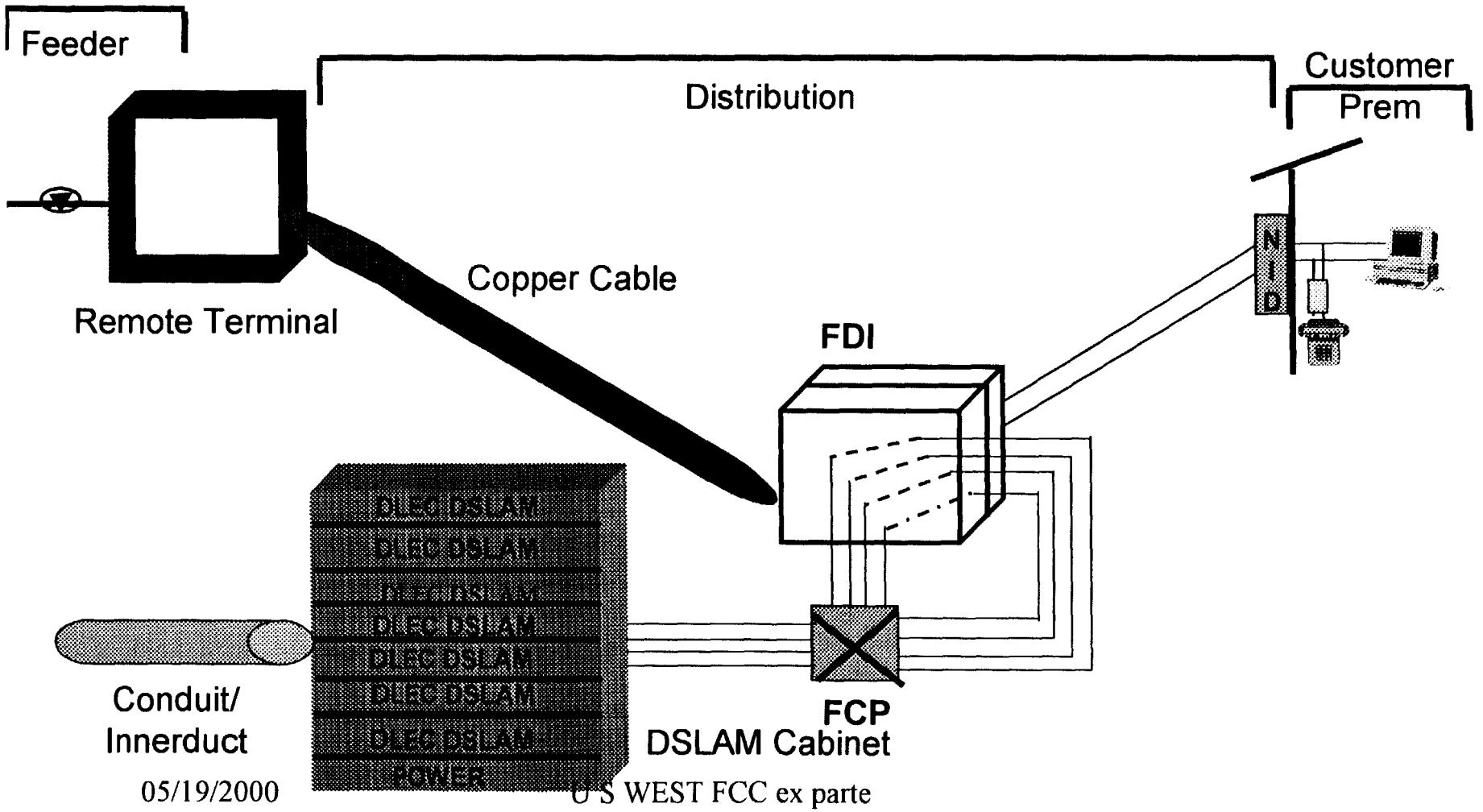


FDI = Feeder Distribution Interface
DSLAM = DSL Access Multiplexer

DSLAM Cabinet at the DLC Remote Terminal



DSLAM Cabinet Next to the FDI



Is "Plug and Play" Possible Now?

- Vendor DSLAM housing is vendor specific.
- Vendor DSLAM equipment housing accommodates only the DSLAM vendor's cards.
- Equipment design of the DLC Remote Terminal does not allow for multiple CLEC access.
- DLC RT design expects provisioning to take place via computer interface.
- Line cards at the DLC RT serve 4 customers. Access to one customer has the potential to impact the other three.

Conclusions

- Not all remote terminals are the same.
- The RBOC Outside Plant configurations are not all the same.
- Connecting at either the DLC remote terminal or the FDI presents different technical and operational considerations for each option.
- Practical consideration of the pros and cons of placement in either needs to be assessed.
- "Plug and Play" is not here today.